Message

From: Garland, Jay [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=8344688361EC4461B89037AFBF43F5AA-GARLAND, JAY]
Sent: 10/26/2018 4:33:41 PM
To: Ed Russo [edr@watergenusa.com]; Yehuda Kaploun [yehudak@watergenusa.com]
CC: Impellitteri, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2b830d5f8c64e99aa47f508e871ffd4-Impellitteri, Chistopher]
Subject: RE: Reports

As I work on finalizing the 2 reports for external peer review, here are my responses to your comments below.

1) Water Quality language: As specified in our statement of work related to the CRADA, the water quality testing we performed on the WaterGen 350 focused on microbiological measurements, and we found (and clearly report) that no opportunistic pathogens were detected during the 3 month study. We also agreed that we would review 3rd party water quality data provided by Watergen, and I am in the process of adding our review of that data to this water quality testing report. These data address heavy metals and some general water quality measures (e.g., pH, conductivity, turbidity) but not VOCs. The report will compare the 3rd party data to EPA drinking water standards, indicating that none of the elemental results were above current EPA primary or secondary drinking water standards. Watergen also provided microbiological testing results which indicated no fecal contamination. Estimates of total numbers of microorganisms (HPC) were elevated, supporting the value in examining for microorganisms of concern which are not of fecal origin (i.e., *Legionella, Mycobacterium*), which was the focus of our testing. We do not plan on reporting the specific test data provided by Watergen, just discussing how they compare to EPA drinking water standards, since we consider these data confidential business information (CBI); please let me know if t you concur.
2) Inclusion of Ecololab data: Our goal was to evaluate the technological approach of AWG, not a specific vendor (please note the disclaimer to our report "Mention of trade names, products, or services does not convey, and should not be interpreted as conveying, official EPA approval, endorsement, or recommendation"). Our goal was evaluate several types of AWGs, but were unsuccessful in our attempts to enter into CRADAs with other vendors We greatly appreciate your willingness to provide both your equipment for testing and expertise to generate the LCA, and hope that you concur that these microbiological and LCA data are of mutual benefit. While we could not obtain samples for analysis from other AWG units, we were able to obtain sufficient information on the Ecololab system for our LCA modeling. As stated in the report "These data were provided directly by the vendors (Watergen and EcoloBlue) in the form of vendor specific reports, completed data forms, via communication over email or provided on the vendors' official websites". We present results for the 2 vendors separately to provide 2 independent comparisons of AWG to bottled water as approaches for providing water when drinking water is unavailable. Again, our use of vendor names does not convey official "EPA approval, endorsement, or recommendation". We are trying to provide independent assessment of AWGs as an approach relative to bottled water; decision makers will have to determine what vendor they use for either AWG or bottled water; the vendor's ability to deliver a product as specified will certainly be critical to their determination. In addition, I think it is warranted to state that Ecoloblue is no longer an active vendor as long as that can be clearly established. We have specifically noted where all the information was obtained from each of the vendors in a separate appendix to this report (which I will send you shortly), and we will reference that appendix after the following statement currently in the report "These data were provided directly by the vendors (Watergen and EcoloBlue) in the form of vendor specific reports, completed data forms, via communication over email or provided on the vendors' official websites" for clarity.
3) Water production rate. We modeled a range of water production rates for the different size systems, not just a single value. The different production rates we used are reported in Table 6, and were selected based on data from your brochures and on the data form completed by your staff. Specifically, for the large production system , both sources provided a range of 3000-4000. Other numbers could be used, but we based our analysis on what we considered the best expert opinion from your company based on your own published literature and direct communication with internal experts. Higher estimates for daily production rates would have minimal impacts on the overall results since we used a constant estimate of 350 Wh/L produced. More water produced means

more electricity used, and since the major driver for all of your costs (and impacts) are from the energy use during operation, changes in daily production will have minimal impact. In summary, use of higher daily production rates are inconsistent with your own internal documents, and will not have a major impact on the conclusions.

I will send you the revised version of the water quality report with the addition of our discussion of the 3rd party data included. Also will send the asppendix I mentioned wiotht he soredsc of information as well as the specific sources of info tor the daily water production.

From: Ed Russo [mailto:edr@watergenusa.com]
Sent: Monday, October 15, 2018 9:09 PM
To: Garland, Jay <Garland.Jay@epa.gov>; Yehuda Kaploun <yehudak@watergenusa.com>
Subject: Reports

Jay,

Sorry for the delay. Yehuda and I can be in Cincinatti late afternoon October 24. Perhaps we can meet with you and set up a call with all parties a few days after that.

With regard to the language changes for the water quality analysis:

"No opportunistic pathogens, heavy metals, VOCs, or other water contaminations were detected in this study and the water produced by the Water Gen 350 atmospheric water generator was safe for human consumption. The water produced meets or exceeds EPA water standards."
"Any water exposed to ambient air and not stored in a sealed container has the potential for microbial growth. Consequently, water storage containers should always include an anti microbial applicatin, such as chlorine or Ozone."And our comments regarding the LCA:

Any mention of Ecoloblue is confusing at best since this company never produced any equipment that confirmed their advertised abilities. The company no longer functions.

We would also appreciate using our advertised production capabilities of 5,000 liters per day in the calculations and not the 3,000 liters per day that was used. We actually produce 6,000 liters per day, but 5,000 liters is fair.

Let's discuss.

Ed
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